

# Are All the Calories the Same?



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# Presenter Disclosures

No relationships to disclose or list





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# What is it in terms of nutrition?

Optimal Calories

Quality of Calories

# Protein

Protein is found in meat, fish, milk and cheese.

I Protein provides the building blocks for most of the body's tissues, nerves, internal organs

I Proteins are used to make neurotransmitters and are essential to improve immune system

# Why is Protein important?

- | Protein helps curb hunger
- | Protein helps build muscle mass
- | Soy protein gives you high quality plant protein without the added calories of animal protein



## Best Protein Sources

Food Item	One Unit	Calories	Protein (gm)
Ocean-Caught Fish	4 oz, cooked weight	130-170	25-31
Shrimp, crab, lobster	4 oz, cooked weight	120	22-24
Tuna	4 oz, water pack	145	27
Scallops	4 oz, cooked weight	135	25
Egg whites	7 whites	115	25
Turkey Breast	3 oz, cooked weight	135	25
Chicken Breast	3 oz, cooked weight	140	25
Soy Hot Dog	2 links	110	22 (varies)
Soy Ground Round	3/4 cup	120	24
Soy Burgers	2 patties	160	26
Tofu, firm	1/2 cup	180	20 (varies)

# Carbohydrate

- I Grains, fruits and vegetables are key sources of carbohydrates.
- I Sugar, starch are less favorable



# Add Vegetable Servings

## 3+ per day, about 55 calories

Food Item	Portion	Calories	Fiber
<b><i>Cooked Vegetables</i></b>			
Acorn Squash, baked	1 cup	85	6
Artichoke	1 medium	60	6
Asparagus	1 cup	45	4
Beets, cooked	1 cup	75	3
Broccoli, cooked	1 cup	45	5
Brussels Sprouts	1 cup	60	4
Cabbage, cooked	1 cup	35	4
Cauliflower, ckd	1 cup	30	3
Carrots, cooked	1 cup	70	5
Celery, diced	1 cup	20	2
Chinese Cabbage, ckd	1 cup	20	3
Collard greens, ckd	1 cup	50	5

## Add Fruits 3+ per day, about 70 calories

Food Item	Portion	Calories	Fiber
Apricots	3 whole	50	3
Avocado	¼ average fruit	80	2
Blackberries	1 cup	75	8
Blueberries	1 cup	110	5
Cantaloupe	1 cup cubes	55	1
Grapes	1 cup	115	2
Honeydew	1 cup cubes	60	1
Kiwi	1 large	55	3
Mango	½ large	80	3
Nectarine	1 large	70	2
Orange	1 large	85	4
Orange Juice	½ cup	50	0
Papaya	½ large	75	3
Peach	1 large	70	3

# Fat

- | Saturated Fats
- | Mono-unsaturated Fats
- | Poly-unsaturated Fats

# Mono-unsaturated (? -9)

## Sources

- | • olive oil (71%)
- | • Avocados (67%)
- | • Almond oil (65%)
- | • Peanut oil (40-55%)
- | • Rapeseed (Canola) oil (53%)

## Biologic Role

- | • Helps lower circulating levels of LDL cholesterol, triglycerides
- | • Not-essential but improves vascular health

# Two Types of Poly Unsaturated Fatty Acids

## Omega-6 (linoleic)

- | Safflower oil (75%)
- | Sunflower oil (70%)
- | Grapeseed oil (68%)
- | Corn Oil (55%)
- | Soybean oil (51%)

## Omega-3 (linolenic)

- | Walnut oil (10%)
- | Rapeseed oil (10%)
- | Wheat germ oil (10%)
- | Other sources
  - Fish (DHA, EPA)
  - Flaxseed
  - Leafy greens

# Opposing Roles of 6's and 3's

## Omega-6 eicosonoids

- | pro-inflammatory
- | pro-aggregatory
- | pro-vasoconstriction
- | ?II-6, TNF- $\alpha$

## Omega-3 eicosomoids

- | less-inflammatory
- | less aggregatory
- | favor vasodilation

## Ratio of ? -6 to ? -3

Paleolithic Man 2:1

Inuit Eskimo 1:1 to 2:1

Current American 15:1 to 30:1

WHO recommendation 5:1 to 10:1

## Vitamins & Minerals

- | Vitamins and minerals are essential
- | The 'B' complex vitamins are particularly important for producing energy. Vitamins A, C and E are powerful antioxidants and immune function
- | Vitamin D is important for cell maturation



# Phytochemicals/Phytonutrients

- | Non-nutrient plant compounds
- | provide health benefits against certain chronic human illnesses such as cancer, heart disease, neurodegenerative diseases etc.

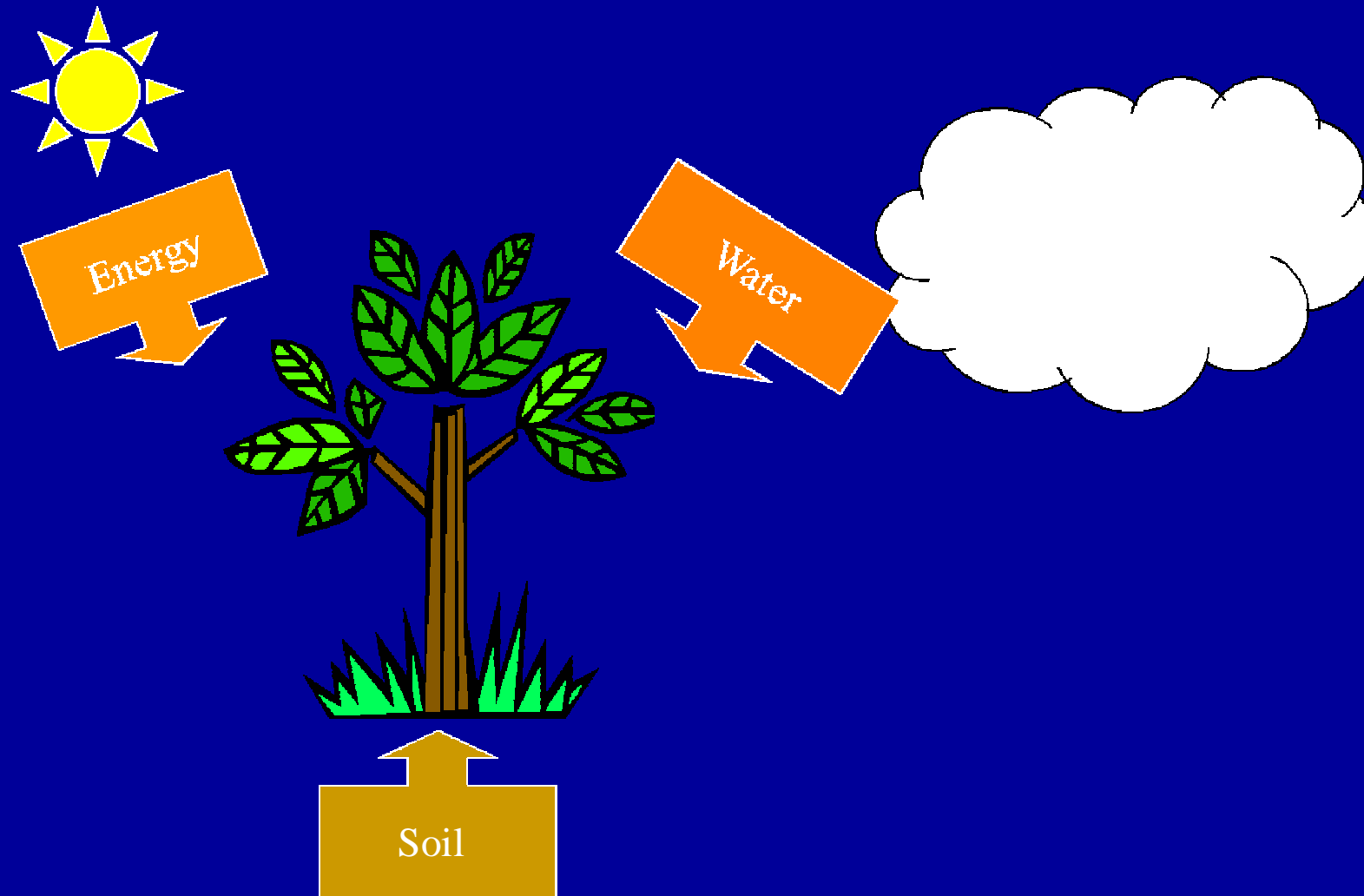
# Colors Represents Nutrients



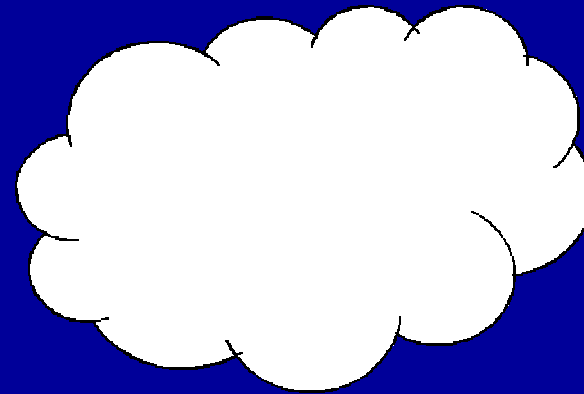
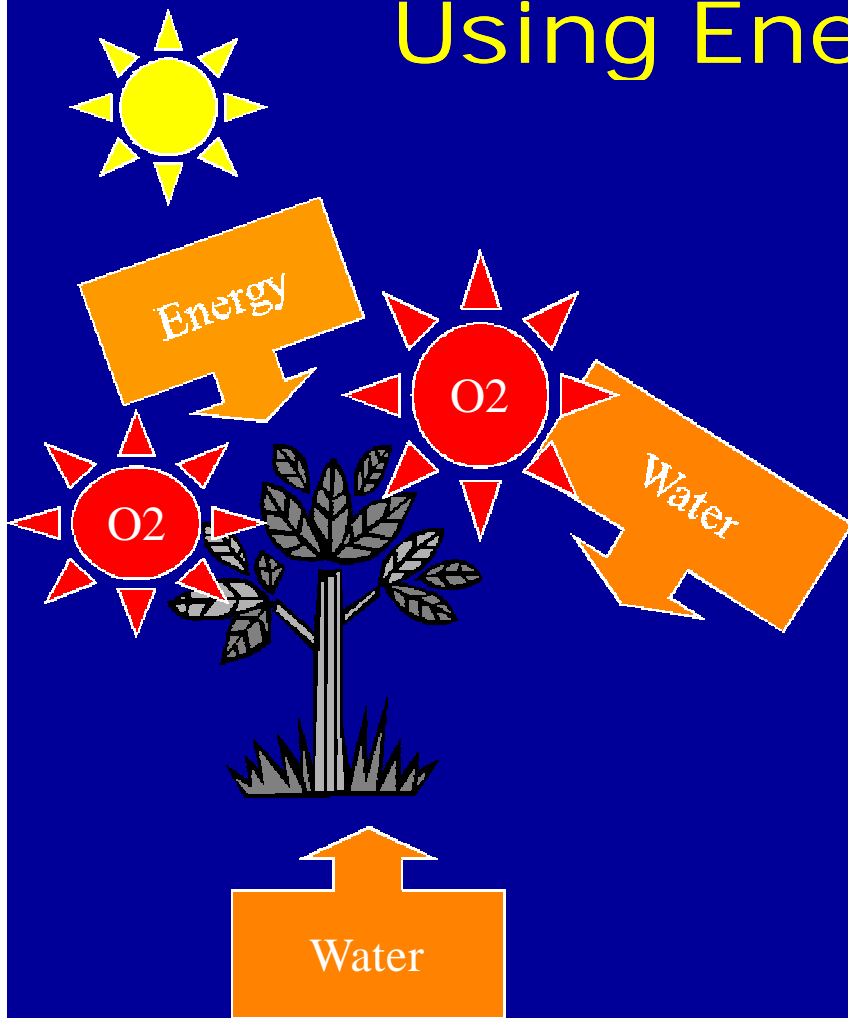
# In the Beginning.....



And They Grew.....

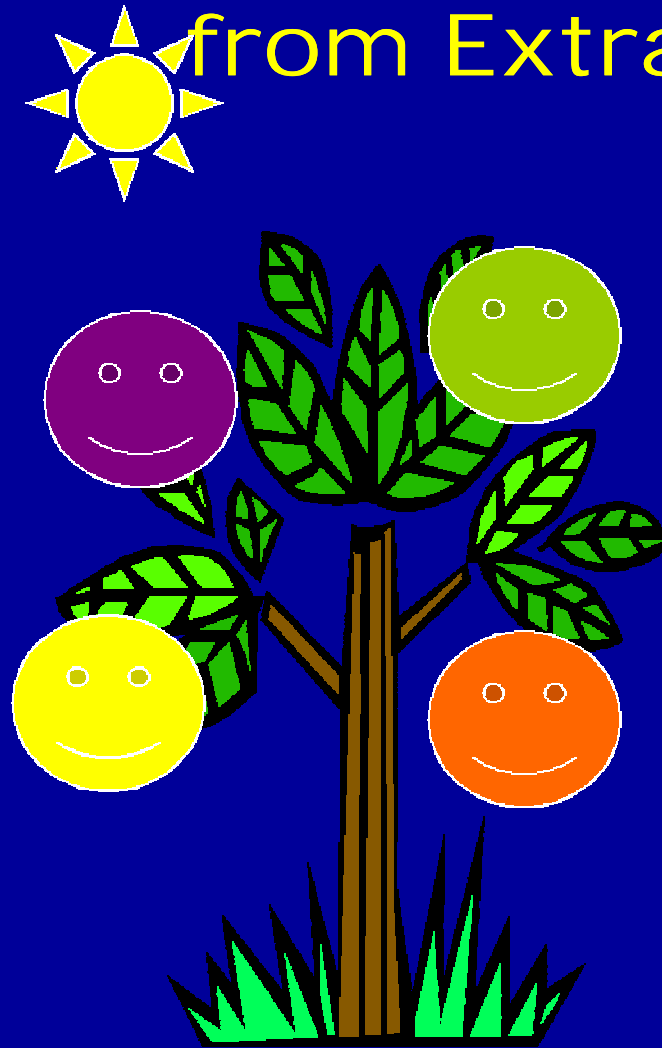


# Then The Plants Made Oxygen Using Energy of the Sun



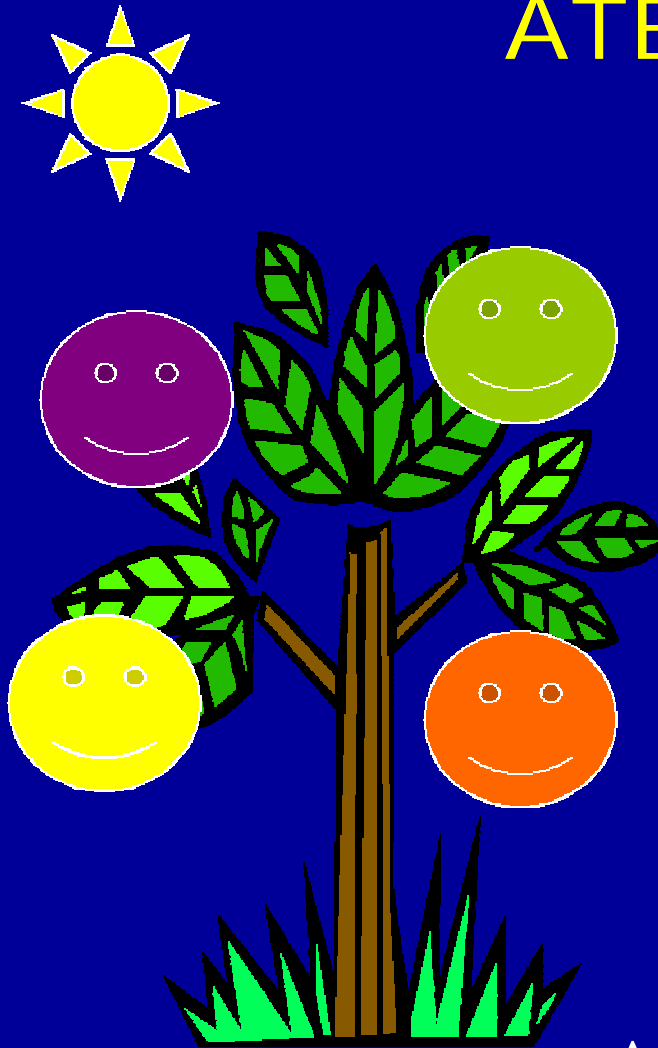
**AS OXYGEN BUILT UP, THEY  
NEEDED TO PROTECT  
THEMSELVES FROM THE BAD  
EFFECTS OF TOO MUCH OXYGEN**

So Each Plant Protected Itself  
from Extra Oxygen by Making ...



**COLORFUL  
NATURAL PLANT  
NUTRIENTS  
(ANTIOXIDANTS)**

PEOPLE CAME AND  
ATE THE PLANTS...



AND LIFE WAS GOOD!!!

## Ascorbic Acid



Unprecedented opportunities exist for the expanded use of foods and components to achieve genetic potential, increase productivity and reduce the risk of disease



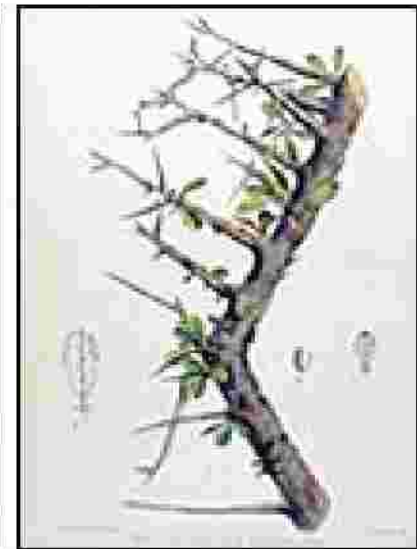


# Cruciferous Vegetables



- | Sulforaphane (SFN), a prominent isothiocyanate

# SPICES



EXOTIC FLAVORS & MEDICINES

# Avocado



# Lycopene

- | In addition to its antioxidant activity, biological activities include induction of cell-cell communications and growth control.



Photo ©2004 LycoRed

# Berry Phenolics

- | Flavonoids
- | Hydrolyzable tannins
- | Phenolic Acids

*Seeram et al., Food Chem 2005,*



# Tea

- | First tea 5000 years ago by Shen Nung
- | Consumption of tea second to water
- | *Camellia sinensis* or *assamica*
- | White tea, Green tea - not fermented
- | Black tea - fermented
- | Oolong tea - partially fermented
- | Green tea extract supplement



# Sources of Resveratrol

- | Resveratrol is found in
  - Grapes (only in skin)
  - Wine
  - Grape Juice
  - Peanuts
  - Blueberries
  - Bilberries
  - Cranberries





# TURMERIC

## Historical Uses:

- | Used as a condiment, healing remedy, and textile dye
- | Used in Indian and Chinese medical systems as an anti-inflammatory agent



# What Your Body Needs

- | PROTEINS
- | CARBOHYDRATES
- | FATS
- | MINERALS
- | VITAMINS
- | NATURAL PLANT NUTRIENTS

# CONCLUSIONS

- | Not all the Calories are the same
- | Optimal calories are the key to Health
- | Fruits and vegetables contain high levels and a wide diversity of phytonutrients